



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q95419

Kazutomo MURAKAMI, et al.

Appln. No.: 10/596,407

Group Art Unit: 2612

Confirmation No.: 6272

Examiner: Jack K. WANG

Filed: June 12, 2006

For: DEVICE AND METHOD FOR DETECTING ABNORMALITY OF ROTATING BODY

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

**MAIL STOP AF - PATENTS**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Pilot Program, and further to the Examiner's Final Office Action dated November 30, 2009, Applicant files this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

Applicant turns now to the rejections at issue:

*Claims 1, and 11-13 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Inoue et al. (US 2002/0030481; hereinafter "Inoue").*

As Applicants argued in the September 28, 2009 Amendment, the band-pass filter of Inoue does not correspond to the claimed adaptive digital filter. Specifically, Applicants maintain that Inoue fails to disclose or suggest the claimed adaptive digital filter which: extracts a signal synchronized with the rotation cycle and picks out a signal having no correlation with the rotation cycle and a signal synchronized with the rotation cycle extracted by the extracting

means, and is adapted by means of the signal picked out and having no correlation with the rotation cycle.

The Examiner alleges that the band pass filter (step 610) extracts a signal synchronized with the rotating cycle (executed to set the average pulse interval) and picks out a signal (resonance frequency) having no correlation with the rotation cycle (Office Action, page 10).

In other words, the Examiner appears to be stating, in part, that the resonant frequency of Inoue, which is determined based upon a signal that has multiple components at different frequencies, has no correlation with the rotation cycle. Applicants disagree.

The only band-pass filter of Inoue merely removes any air pressure information from the signal within a certain frequency (paragraphs [0049] and [0052]).

The subject signal of Inoue is based upon the speed of the rotor which rotates with the tire, and includes multiple components that have different frequencies, which can be determined using frequency analysis. All of these different frequencies would naturally have some correlation with the rotation cycle of the body. That is, each frequency may be defined as an N order vibration of the tire. The resonant frequency is just one frequency of the many frequencies within the signal, and would certainly have a correlation with the rotation cycle of the rotating body.

Therefore, it is respectfully submitted the alleged band-pass filter of Inoue does not pick out a signal having no correlation with the rotation cycle and a signal synchronized with the rotation cycle extracted by the extracting means.

In addition, Inoue fails to disclose that the adaptive digital filter is adapted by means of the signal picked out and having no correlation with the rotation cycle.

The band-pass filter of Inoue merely extracts a certain range of frequencies from the entire signal (paragraph [0049]). For example, to get information on the tire air pressure, the components of the signal that have frequencies of about 20 to 60 Hz or 50 to 80 Hz are taken out, accumulated, and once there is enough data, analyzed (paragraphs [0049] - [0051]).

The remaining components of the signal (i.e., those not within the range in which the band-pass filter filters the signal) are not used in any manner to adapt or otherwise change how the band-pass filter operates. In addition, the resonant frequency, determined based upon the many frequencies present within the signal, is not used in any way at all to adapt the band-pass filter. Instead, the resonant frequency is merely used to give a warning if it is below a predetermined threshold value (paragraph [0053]).

The Examiner points to paragraph [0051] as allegedly disclosing this feature relating to the adapting of the digital filter. However, this paragraph of Inoue merely teaches how to determine the resonance frequency based upon a Fourier analysis of the air pressure information. As discussed above, this resonance frequency is not used to adapt or otherwise change how the band-pass filter operates, but instead is merely used to give a warning if it below a predetermined value.

Thus, Inoue fails to disclose or suggest that the band-pass filter is adapted by means of the signal picked out and having no correlation with the rotation cycle.

Therefore, Applicants maintain that Inoue fails to disclose or suggest the claimed adaptive digital filter which: extracts a signal synchronized with the rotation cycle and picks out a signal having no correlation with the rotation cycle and a signal synchronized with the rotation cycle extracted by the extracting means, and is adapted by means of the signal picked out and having no correlation with the rotation cycle.

It is submitted that claim 11 is patentable at least for the same reasons as claim 1. It is also submitted that claims 12 and 13 are patentable at least by virtue of their dependency.

*Claims 3-10 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Inoue et al in view of Brusarosco et al. (US 2007/0010928; hereinafter "Brusarosco").*

It is respectfully submitted that claims 3-10 are patentable at least by virtue of their dependency on claim 1 because Brusarosco fails to remedy the deficiencies of Inoue.

With regard to claims 5 and 6, Applicants previously argued that Brusarosco did not disclose the claimed delay circuit between an input portion of the data from the measuring means and an adaptive digital filter (see September 28, 2009 Amendment, page 9).

The Examiner has responded by stating that "it is well-known in the art that each additional signal processing step will results in delay the data in the circuit" (Office Action, page 11).

While the Examiner should construe the claim language broadly, the claims are to be given their broadest reasonable interpretation consistent with the specification (M.P.E.P. § 2111). Applicants respectfully submit that it would not have been reasonable for one skilled in the art to conclude that either a low-pass filter such as that of Brusarosco would correspond to a delay circuit, or that a low-pass filter would be necessary or even improve the device of Brusarosco. In other words, the Examiner's position is not reasonable in light of the specification and how one of ordinary skill would interpret the claim.

Thus, Applicants submit that claims 5 and 6 are separately patentable for the features recited therein.

Respectfully submitted,

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

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CUSTOMER NUMBER

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/Stacey A. Fluhart/  
Stacey A. Fluhart  
Registration No. 63,726